

REMARKS/ARGUMENTS

Claim 1 is amended to reflect the limitations examiner expresses in her arguments. The applicant respectfully submits that the exclusion of no additional curative agents reflects the limitations deemed to distinguish the IPN formed by Doney from that of Cornert et al. (which requires additional moisture to effect curing) and the need for a "curative for the epoxy resin" in the curable composition of Willett et al. The amendment distinguishes Doney over Cornert et al. by the additional limiting statement of "a primary thermoplastic crystalline polymer" over "a prepolymer component" as stated in the Cornert et al. patent. The "Condensed Chemical Dictionary" by Hawley, 10th edition, defines prepolymer as "an adduct or reaction intermediate of a polyol and a monomeric isocyanate, in which either component is in considerable excess of the other. A polymer of medium molecular weight having reactive hydroxyl and -NCO groups. It is used in the preparation of polyurethane coatings and foams." It is well known in the art that the formation of crystalline polymers requires close to one to one ratios of monomers and are "usually quite high molecular weights", therefore it follows that "thermoplastic crystalline polymers" are quite distinguished and apart from "prepolymers".

Claims 3, 5, 8, 9, and 12 are amended to reflect the limitations set forth in the Claim 1 amendments.

Claim 15 is amended to reflect the understanding of examiner's statement that "Claim 15 is indefinite in that it is unclear how the MDI can be definitive of the epoxy compound".

Claims 11, and 18-20 are withdrawn as these limitations are already drawn to amended claim 1.

Claims 23-26, 28-33, 35, 36, 37, and 51 are withdrawn in view of understanding the examiner's statement, "It is well settled that the evaluation of product-by-process claims is based on the product rather than on the process steps".

Claims 38-43, 45, 52, 54, 56-59 are amended to reflect examiner's statement, "It is well settled that the evaluation of product-by-process claims is based on the product rather than on the process steps".

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned 'VERSION WITH MARKINGS TO SHOW CHANGES MADE'.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claim 1 has been amended as follows:

1. (Amended) A thermoplastic composition ~~created~~ formed from the melt blending of a ~~first polymer together with a secondary polymer in the presence of a catalyst together with at least one isocyanate or epoxy compound.~~

- a. A primary thermoplastic crystalline polymer present in the amount of 60 to 99 weight percent.
- b. A secondary elastomeric polymer present in the amount of 1 to 40 weight percent.
- c. An isocyanate or epoxy compound present in the amount of 0.1 to 3.0 percent based on the weight of the primary thermoplastic crystalline polymer.
- d. A catalyst present in the amount of 0.001 to 5.0 percent based on the weight of the primary thermoplastic crystalline polymer.

2. The composition of claim 1 wherein an interpenetrating network is created with said thermoplastic composition.

Claim 3 has been amended as follows:

3. (Amended) ~~A thermoplastic composition created from the blending of a melted first polymer together with a secondary polymer in the presence of a catalyst, together with at least one isocyanate or epoxy compound.~~ The composition of claim 1 wherein said blending results in the formation of at least one interpenetrating network within said thermoplastic composition.

Claim 4 has been cancelled.

Claim 5 has been amended as follows:

5. (Amended) The composition of claim 1 wherein said secondary polymer is compatible for blending with said ~~first polymer~~ primary thermoplastic crystalline polymer.

6. The composition of claim 1 wherein said components are dynamically blended.

7. The composition of claim 1 wherein said components are not dynamically blended.

Claim 8 has been amended as follows:

8. (Amended) The composition of claim 1 wherein said secondary elastomeric polymer is dissimilar to said first polymer.

Claim 9 has been amended as follows:

9. (Amended) The composition of claim 1 wherein said ~~first~~ primary thermoplastic crystalline polymer is polyethylene terephthalate.

10. The composition of claim 9 wherein an interpenetrating network is created within said thermoplastic composition.

Claim 11 has been cancelled.

Claim 12 has been amended as follows:

12. (Amended) The composition of claim 1 wherein ~~said first primary thermoplastic crystalline polymer is a recycle~~ may be composed of several polymer types of mixtures such as would occur in using a recycled source of polymer.

Claim 13 has been cancelled.

14. The composition of claim 1 wherein said catalyst is compounded into said secondary polymer in advance of blending.

Claim 15 has been amended as follows:

15. (Amended) The composition of claim 1 wherein said isocyanate ~~or epoxy~~ compound is methylenediphenylene diisocyanate ("MDI").

16. The composition of claim 1 wherein the number of isocyanate or epoxy compounds is one.

17. The composition of claim 1 wherein the number of isocyanate or epoxy compounds is more than one.

Claim 18 has been cancelled.

Claim 19 has been cancelled.

Claim 20 has been cancelled.

Claim 21 has been cancelled.

22. The composition of claim 1 further comprising at least one heat stabilizer component.

Claim 23 has been cancelled.

Claim 24 has been cancelled.

Claim 25 has been cancelled.

Claim 26 has been cancelled.

Claim 27 has been cancelled.

Claim 28 has been cancelled.

Claim 29 has been cancelled.

Claim 30 has been cancelled.

Claim 31 has been cancelled.

Claim 32 has been cancelled.

Claim 33 has been cancelled.

Claim 34 has been cancelled.

Claim 35 has been cancelled.

Claim 36 has been cancelled.

Claim 37 has been cancelled.

Claim 38 has been amended as follows:

38. (Amended) ~~The process of claim 23~~ composition of claim 1 wherein said at least one catalyst is selected from the group: dibutyltin dilaurate, maleate, precursors for phenolic resin, urea, melamine, dioctyltin dilaurate, sulphuric acid, sodium acetate, zinc chloride, carbomide, 5-phenyltetrazole, tert-butyl peroxy 2-ethylhexyl carbonate, tert-butyl peroxy-3,5,5-trimethylhexanoate, 2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane, tert-butyl peroxybenzoate.

Claim 39 has been amended as follows:

39. (Amended) ~~The process of claim 38~~ composition of claim 1 wherein the number of catalysts is one.

Claim 40 has been amended as follows:

40. (Amended) ~~The process of claim 38~~ composition of claim 1 wherein the number of catalysts is more than one.

Claim 41 has been amended as follows:

41. (Amended) ~~The process of claim 23~~ composition of claim 1 wherein said isocyanate is selected from the group: 4,4'-phenylmethane diisocyanate (MDI), polymethylene polyphenyl, polyisocyanate (PAPI).

Claim 42 has been amended as follows:

42. (Amended) ~~The process of claim 23~~ composition of claim 1 wherein said epoxy is selected from the group: phenols, bisphenols, aromatic epoxy resin and cycloaliphatic epoxy resin.

Claim 43 has been amended as follows:

43. (Amended) ~~The process of claim 23~~ composition of claim 1 wherein the melt temperature is sufficient to ensure at least two phases have 3-dimensional spatial continuity resulting from the dynamic curing in the presence of said catalyst.

Claim 44 has been cancelled.

Claim 45 has been amended as follows:

45. (Amended) ~~The process of claim 23~~ composition of claim 1 wherein said first polymer is from a scrap source.

Claim 46 has been cancelled.

Claim 47 has been cancelled.

Claim 48 has been cancelled.

Claim 49 has been cancelled.

Claim 50 has been cancelled.

Claim 51 has been cancelled.

Claim 52 has been amended as follows:

52. (Amended) ~~The process of claim 23~~ composition of claim 1 further comprising the addition of at least one of the following additives during blending: antioxidants, stabilizers, dyes, flame-retardants, extenders, UV stabilizers and processing aids.

53. Claim 53 has been cancelled.

Claim 54 has been amended as follows:

54. (Amended) ~~The process of claim 23~~ composition of claim 1 wherein said melt blending is performed in an extruder.

Claim 55 has been cancelled.

Claim 56 has been amended as follows:

56. (Amended) ~~The process of claim 23~~ composition of claim 1 wherein said melt blending is performed in an application unit.

Claim 57 has been amended as follows:

57. (Amended) ~~The process of claim 56~~ composition of claim 1 wherein the application unit is an injection mold.

Claim 58 has been amended as follows:

58. (Amended) ~~The process of claim 23~~ composition of claim 1 wherein said catalyst is present at a level of 0.001 to 10.0 weight percent, based on the weight of said first polymer.

Claim 59 has been amended as follows:

59. (Amended) The ~~process of claim 23~~ composition of claim 1 further comprising the addition of at least one additional heat stabilizer during the melt blending.

Claim 60 has been cancelled.

Claim 61 has been cancelled.

Claim 62 has been cancelled.

Claim 63 has been cancelled.

Claim 64 has been cancelled.

Claim 65 has been cancelled.

Claim 66 has been cancelled.

Claim 67 has been cancelled.

Claim 68 has been cancelled.